

REMARKS

The Office Action dated 29 January 2003 has been received and duly noted. In response to the objections to the drawings, enclosed please find revised Figure 1, which changes the numeral of the weld to 27. The specification has been corrected accordingly. The specification has also been amended to include reference to the number 14 shown in Figure 1.

Claims 7, 14 and 20 have been amended to cure the objections noted by the Examiner.

The Examiner indicated that Claim 3 would be allowed if written in independent form. Claim 1 has been amended to include many of the limitations previously set forth in Claims 2 and 3, and Claims 2 and 3 have been cancelled. More importantly, amended Claim 1, as well as amended independent Claims 11 and 16 and newly added independent Claims 21 and 26, delete or exclude the recitation to oversized ports and the bolts bearing is shear. Applicant submits that amended Claim 1 and dependent Claims 4-10 should be in condition for allowance.

The Examiner indicated that independent Claim 12 would be allowed if written in independent form. Claim 11 has been amended to include many of the features previously set forth in Claim 12. Accordingly Applicant submits that amended Claim 11 and dependent Claims 13 and 14 should be in condition for allowance.

The Examiner indicated that Claim 19 would be allowed if written in independent form. Independent Claim 16 has been amended to include many of the features previously set forth in Claims 18 and 19, and Claims 18 and 19 have been cancelled. Accordingly, Applicant submits that amended Claim 16 as well as dependent Claims 17 and 20 should now be in condition for allowance.

The Examiner indicated that Claim 9 would be allowed if written in independent form. New Claim 21 includes many of the limitations of originally filed Claim 1 in combination with Claim 9. Accordingly, Claim 21 and dependent Claims 22-25 should be in condition for allowance.

The Examiner indicated that Claim 15 would be allowed if written in independent form. New Claim 26 includes many of the features of originally filed Claim 11 in combination with Claim 15. Claim 26 and dependent Claims 27 and 28 should thus be in condition for allowance.

Newly added Claims 29 and 33 are similar to original Claims 1 and 33. In a preferred embodiment, the present invention places the bolt extending through the plates in both tension and shear, and the holes in the plate are positioned to achieve the desired result of pulling the plates together with the bolts in both tension and shear. The prior art does not teach placing the bolts in both shear and tension. Accordingly, Claims 29-35 shall also be in condition for allowance.

In view of the above, early allowance of the application is requested.

MARKED-UP VERSION OF SPECIFICATION:

Figure 1 depicts a pipe shoe 10 according to the present invention for supporting an insulated pipe. The pipe shoe 10 includes a generally rectangular base plate 12 which has a lower planar surface 14 for sliding engagement with a top surface of a pipe rack or other structural support, and a parallel upper planar surface 16 for supporting a left-side support plate 22 and a right-side support plate 24, e.g. by weld [26] 27. Preferably the left-side 18 and the right-side 20 of the base plate 12 are spaced outwardly from respective support plates 22, 24, so that conventional guides (not shown) may guide the pipe shoe 12 as it moves axially with respect to the pipe rack in response to thermal expansion or contraction of the pipe. As shown in Figure 1, the pipe shoe includes a lower curved plate 32 which is affixed to and supported on both the left-side support plate 22 and the right-side support plate 24. Preferably a unitary component including plates 22, 32 and 24 may be formed using conventional manufacturing equipment to achieve the desired shape, then the support plates welded to the base plate 12.

MARKED-UP VERSION OF CLAIMS:

1. A pipe shoe for supporting a pipe from a pipe rack or other structural support, the pipe shoe comprising:
 - a generally horizontal base plate for sliding engagement with the pipe rack or other structural support in response to thermal expansion of the pipe;
 - a left-side support plate and a right-side support plate each affixed to and extending generally upward from the base plate, the right-side support plate including a right-side support plate port;
 - a curved lower plate affixed to and supported on both the left-side support plate and the right-side support plate, the curved lower plate being configured for supporting the pipe;

a curved upper plate including a left-side lower end and a right-side lower end for positioning about the pipe;

a left-side attachment member for attaching the left-side lower end of the upper plate to the left-side support plate; [and]

an attachment mechanism for securing the right-side lower end of the upper plate to the right-side support plate, the attachment mechanism including a right-side bolt passing through a hole in the right-side lower end of the upper plate and the right-side support plate port, [at least one of the right-side hole and the right-side port being oversized with respect to the right-side bolt to permit the right-side bolt to pass through the hole, and the port, and] such that the curved upper plate is pulled toward the base plate to place the right-side bolt in [both] tension [and shear] when the right-side bolt is tightened[.];

the right-side support plate being angled with respect to a plane perpendicular to a plane of the base plate; and

the right-side support plate being angled away from the centerline of the pipe, such that tightening the right-side bolt pulls the right-side lower end of the upper plate toward a lower portion of the pipe.

7. The pipe shoe as defined in Claim 1, wherein the curved lower plate is configured for planar engagement with the pipe along a circumferential length [of] from 90° to 160°.

11. A pipe shoe for supporting a pipe from a pipe rack or other structural support, the pipe shoe comprising:

a generally horizontal base plate for sliding engagement with the pipe rack or other structural support in response to thermal expansion of the pipe;

a left-side support plate and a right-side support plate each affixed to and extending generally upward from the base plate and angled away from the centerline of the pipe with respect to a plane perpendicular to the base plate, the right-side support

plate including a right-side support plate port and the left-side support plate including a left-side support plate port;

a curved lower plate affixed to and supported on both the left-side support plate and the right-side support plate, the curved lower plate being configured for supporting the pipe;

a curved upper plate including a left-side lower end and a right-side lower end for positioning about the pipe; [and]

an attachment mechanism for securing the right-side lower end of the upper plate to the right-side support plate, the attachment mechanism including a right-side bolt passing through a hole in the right-side lower end of the upper plate and the right-side support plate port, [at least one of the right-side hole and the right-side port being oversized with respect to the right-side bolt to permit the right-side bolt to pass through the hole, and the port, and] such that the curved upper plate is pulled toward the base plate to place the right-side bolt in [both] tension [and shear] when the right-side bolt is tightened[.];

the right-side support plate being angled at from 1° to 5° with respect to the plane perpendicular to the base plate, and the left-side support plate being angled at from 1° to 5° with respect to the plane perpendicular to the base plate.

14. The pipe shoe as defined in Claim 11, wherein the curved lower plate is configured for planar engagement with the pipe along a circumferential length [of] from 90° and 160°.

16. A method of supporting a pipe from a pipe rack or other structural support, the method comprising:

providing a generally horizontal base plate for sliding engagement with the pipe rack or other structural support in response to thermal expansion of the pipe;

affixing each of a left-side support plate and a right-side support plate to and extending generally upward from the base plate, the right-side support plate including a right-side support plate port;

affixing a curved lower plate to and supported on both the left-side support plate and the right-side support plate, the curved lower plate being configured for supporting the pipe;

providing a curved upper plate including a left-side lower end and a right-side lower end for positioning about the pipe;

attaching the left-side lower end of the upper plate to the left-side support plate;

securing the right-side lower end of the upper plate to the right-side support plate by inserting a right-side bolt through a hole in the right-side lower end of the upper plate and the right-side support plate port[, at least one of the right-side hole and the right-side port being oversized with respect to the right-side bolt to permit the right-side bolt to pass through the hole and the port]; [and]

tightening the right-side bolt to pull the curved upper plate toward the base plate and place the right-side bolt in both tension and shear[.];

providing a left-side support plate port, a left-side bolt, and a left-side support plate hole in the left-side lower end of the upper plate; and

the left-side support plate being positioned radially inward of the left-side lower end of the upper plate, and the right-side support plate being positioned radially inward of the right-side lower end of the upper plate.

17. The method as defined in Claim [15] 16, further comprising:

angling the right-side support plate with respect to a plane perpendicular to a plane of the base plate, the right-side support plate being angled away from the centerline of the pipe, such that tightening the right-side bolt pulls the right-side lower end of the upper plate toward a lower portion of the pipe.

20. The method as defined in Claim [15] 16, wherein the curved lower plate is configured for planar engagement with the pipe along a circumferential length [of] from 90° to 160°.

Respectfully submitted,



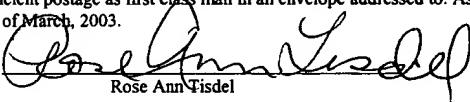
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I hereby certify that this correspondence and all referenced enclosure(s) are being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington D.C. 20231 on this the 13th day of March, 2003.

By:


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